

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference P00034721-P0 | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/JP2004/009295 | International filing date (<i>day/month/year</i>) 24.06.2004 | Priority date (<i>day/month/year</i>) 04.07.2003 |
| International Patent Classification (IPC) or national classification and IPC F16L59/06 F16L59/08 F25D23/06 | | |
| Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. | | |

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| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of 6 sheets, including this cover sheet. |
| 3. This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 1 sheets, as follows: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application |

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| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following which is the language of a translation furnished for the purposes of:

- international search (Rule 12.3 and 23.1(b))
- publication of the international application (Rule 12.4)
- international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-26 as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

the claims:
 nos. 1-27 as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* 28, 29 received by this Authority on 16.03.2005
 nos.* _____ received by this Authority on _____

the drawings:
 sheets 1-9 as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

- the description, pages _____
- the claims, nos. _____
- the drawings, sheets/figs _____
- the sequence listing (*specify*): _____
- any table(s) related to sequence listing (*specify*): _____

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages _____
- the claims, nos. _____
- the drawings, sheets/figs _____
- the sequence listing (*specify*): _____
- any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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| Box No. V | International application No. PCT/JP2004/009295 |
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| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
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1. Statement

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|-------------------------------|--------|--------------------|-----|
| Novelty (N) | Claims | 2-9, 12-24, 28, 29 | YES |
| | Claims | 1, 10, 11, 25-27 | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-29 | NO |
| Industrial applicability (IA) | Claims | 1-29 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Document 1: JP 2003-271044 A (Canon Inc.), 25 September 2003, paragraphs [0015], [0025], fig. 3, 6

Document 2: JP 2003-74786 A (Matsushita Refrigeration Co.), 12 March 2003, claims

Document 3: JP 2000-86937 A (Matsushita Electric Industrial Co., Ltd.), 28 March 2000, claims 5-7, paragraph [0009]

Document 4: JP 2000-34557 A (Sumitomo Electric Industries, Ltd.), 2 February 2000, claims, paragraph [0006]

Document 5: JP 2000-133416 A (Kyocera Corp.), 12 May 2000, paragraph [0012]

Document 6: JP 11-213960 A (Toshiba Lighting & Technology Corp.), 6 August 1999, paragraph [0024]

The inventions set forth in claims 1, 10, 11, and 25 to 27 lack novelty in the light of document 1. The "reflective sheet (9)" comprising an aluminum sheet corresponds to the "radiant heat conduction suppressing part" in the inventions described in the above claims.

Further, the use of a metal foil to form a radiant heat conduction suppressing part is not disclosed in

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Japanese patent application 2003-191970, which is the basis on which the priority claim for the present application is made, and thus, determination as to the novelty and inventive step of the inventions described in claims 1, 10, 11, and 25 to 27 was made without setting 7 July 2003 as the critical date for priority.

The inventions set forth in claims 2 to 7, 12, 19, and 20 do not involve an inventive step in the light of documents 2 and 3. Document 2 discloses an invention wherein the core material of an insulation material comprises dry silica fine particles and an electrically conductive powder. Meanwhile, document 3 discloses an invention wherein a coating film comprising a metal material such as nickel or a fluororesin is formed on the surface of an insulation material, thereby reducing radiant heat conduction and improving the insulation properties of the insulation material.

Thus, a person skilled in the art could easily conceive of using the invention disclosed in document 3 with the insulation material according to the invention disclosed in document 2.

Further, the melting point of a coating film, a feature described in the present claim 6, is merely a feature fittingly determined by a person skilled in the art, and the coating film disclosed in document 3 (see paragraph [0033]) is the same as the coating film described in the description of the present application; thus, the coating film disclosed in document 3 is deemed to have a similar melting point.

Moreover, a core material containing inorganic fibers is commonly used, and thus, the inclusion of

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

inorganic fibers in addition to dry silica fine particles and an electrically conductive powder, a feature described in the present claim 20, is a minor difference in design when designing a core material.

The invention set forth in claims 13 to 18 and 21 to 24 does not involve an inventive step in the light of documents 2 and 3. Constituting an outer covering material by laminating together a heat seal layer comprising a resin film or having a resin film as a substrate, a gas barrier layer, and a protective layer or the like is standard practice in the technical field of vacuum insulation materials such as the invention disclosed in document 2.

Therefore, using the invention disclosed in document 3 with the vacuum insulation material according to the invention disclosed in document 2 does not involve an inventive step, nor does forming a metallic film or the like and laminating it onto a resin film comprising an appropriate material when providing a radiant heat conduction suppressing part on the outer covering of the vacuum insulation material.

The invention set forth in claims 8 and 9 does not involve an inventive step in the light of documents 2 and 4. Document 4 discloses an invention wherein inorganic material films having different indices of refraction are alternately laminated in quarter-wavelength thicknesses, thereby raising the reflectance for infrared rays, namely, raising the proportion of radiant heat conduction that is suppressed. Further, the problem of suppressing radiant heat conduction in a vacuum insulation material

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would be obvious to a person skilled in the art, and thus, using the invention disclosed in document 4 as the means for solving the problem does not involve an inventive step.

The invention set forth in claim 28 does not involve an inventive step in the light of documents 2, 3, and 5. It would be obvious to a person skilled in the art from the invention disclosed in document 3 that using a material which suppresses a large proportion of radiant heat conduction would improve insulation properties, and as disclosed in document 5 (paragraph [0012]), silicon nitride is known as a substance that suppresses a large proportion of radiant heat conduction.

The invention set forth in claim 29 does not involve an inventive step in the light of documents 2, 4, and 6. It would be obvious to a person skilled in the art from the invention disclosed in document 4 that alternately laminating materials having different indices of refraction would improve the proportion of radiant heat conduction that is suppressed, and as disclosed in document 6 (paragraph [0024]), magnesium fluoride, silicon oxide, and the like are known as materials having different indices of refraction.